# 20

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1906 CENTENNIAL 2006

14

The decision to switch to aluminum bats was a decision that was met with a unanimous vote of yes in ND. We have cited three main reasons: cost, safety and weather. In ND the average spring baseball game is played in 49 degree weather. Aluminum bats have changed over the last 20 years for the purpose of production at the plate rather than what they were originally created for – durability for youth programs without a lot of money. Aluminum bats were made to last years at a time. This helped overcome the poor wood and bat making techniques in the 1900's. Since the development of aluminum, the competition to increase "sweet spots", bat speed and trampoline effect have become almost ridiculous. 145 pound players are hitting balls 350 feet. Bat companies advertise this on websites citing "maximum energy transfer from handle to barrel, resulting in maximum bat head "whip" fro a quicker bat and more power through the hitting zone." (www.eastonsports.com) and "multiple sweet spot effect by optimizing barrel flex" (www.worthsports.com). Wood can't be made to defy the laws of physics.

With aluminum being thinned out, bats in ND are breaking and denting more frequently than ever before. The average school is spending over $1000 a year on bats that won't be used much longer than 1 year. North Dakota has more weather issues than Texas, California and the other southern states. This is a huge reason for us changing. Wood is lasting longer than metal. Wood bat technology with boning wood and other production creations is providing quality wood bats in a market overshadowed with aluminum. Composite wood bats are being produced with warranties. Our composite bats are lasting longer than aluminum.

Safety is an issue that can be debated for ever. There has never been a true study done in high school play regarding wood vs. aluminum. We all have our own belief. Division 1 colleges are not going to risk cutting their sponsorship monies by divulging safety figures that make the honey pot seem tainted. We kids getting hit in ND, Montana, and other states. Some are life threatening, some are "close calls". Ground balls cannot be fielded due to excessive speed and hops become errors that can end a season with injury.

The true nature of the game has also been tainted. Coaches don't need to coach. They can wait for the big hit, the flare, the jam shot over the short stop, and Texas leaguers. Base running is a lost art. Situational hitting, the double play, steals, suicide squeezes – all give way to waiting for the big hit from a 150 pound player with a metal

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bat. Colleges have a hard time finding the true ball players. .500 hitters are a dime a dozen rather than the exception. Recruiting is almost impossible. I currently run a scouting database for the state of ND. I have been in contact with 126 coaches from 7 Midwestern states. 125 of them have stated how happy they are with the decision to switch to wood. They have stated that it helps them to recruit quality players, as a .400 hitter will be considered a legit hitter. There are no unseen factors that are provided by aluminum bats such as flares and handle shots that will taint statistics. Kids coming out of ND will be looked at more legitimately as hitters, as their averages won't be tainted by handle shots and end of the bat flares. They will be better base runners as the small ball game will become important and base running a must. Pitchers can learn to pitch inside and master placement of pitches rather than 4 different types that causes strain on young arms. 12-13 year old kids should not have to throw curves and sliders.

I feel this will be a great move for North Dakota. I am conducting a 6 year study on performance. I have statistics from the 18 class A schools in North Dakota since 2004. This will be a three year aluminum bat comparison to three years of wood bat play. Averages, slugging percentages, game times, pitches thrown, run production and power numbers are all being compared. This will be released in 2009. Good luck in your endeavors for wood bat play as you are definitely taking a step in the right direction.

Joel Swanson

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National HS Baseball Coaches Association State Representative

## BACKGROUND

The following information is provided for the NDHSAA, all baseball coaches, officials, and athletic directors in North Dakota. This proposal is made in reference to the on going discussions of many of the high school coaches and officials to adopt wood bats (non-metal) as the official bat for high school baseball in North Dakota.

Ever since their introduction in the early 1970's aluminum bats have dominated the youth and amateur adult baseball markets. Every year new designs and models are introduced, each one claiming to be better than previous models. Each new bat is touted to have a wider sweet spot, more power, better feel, and higher performance. Almost everyone who has ever used an aluminum bat "knows" that they perform better than wood bats. It is an accepted fact that balls come off metal bats faster than they do off wood bats. In recent years the metal vs. wood issue has become quite a controversial topic. Claims that higher batted ball speeds put pitchers and infielders at higher risk for injury have led to calls for restrictions on bat performance. At times the controversy over metal versus wood bats has become quite heated, resulting in threats of lawsuits between bat manufacturers, safety watch organizations, and sports regulatory groups. Around 1998 the NCAA and the Amateur Softball Association of America began to set standards limiting the performance of aluminum bats.

Cost is one of the main issues discussed in the debate between aluminum bats and wooden bats. A team can argue that aluminum bats may cost more, but last longer. This is not necessarily true. Aluminum bats now have a 90-day warranty and can be returned only once with the second bat being delivered with a warranty-ending stamp. The durability of the composite bat will allow it to last longer and cost less. This results in a better investment. For example, a team invests in six aluminum bats for the price of $250 each, which equals a $1500 investment. The same team can invest $720 on wood bats (baum bat) for an equal quantity of bats.

There will always be injuries in competitive sports but if the opportunity to reduce such risks is within our grasp, it is our duty to reach out and apply these measures. The aluminum bat jeopardizes the safety of our student-athletes. Teams and leagues across the country are beginning to return to the traditional wood bat.

With the improved technology and advances in aluminum bats, games are now more dangerous for pitchers and infielders. Although many organizations are aware of the risks and dangers of aluminum bats, still 80% of the market of baseball is non-wood. Coach Jim Morris, head baseball coach for the University of Miami, is well aware of the dangers and was quoted as saying. "anybody can see the ball jumps off an aluminum bat faster than off a wood bat". A baseball hit with a wood bat can reach speeds up to 92 mph, while a baseball hit with an aluminum bat can reach speeds up to 123 mph (Taylor). As a result, this makes it physically impossible for a third baseman, first baseman, or pitcher to get a glove up in the air to protect themselves.

Since the approval of the aluminum bat in 1975 for college play, the player has changed drastically. A ball miss-hit, near the handle or the end of the bat, will go farther off an

aluminum bat than wood bat. This is the cause of inflated batting averages and higher scoring games. A study done at the University of Massachusetts found a loophole exists among the manufacturing of aluminum bats. Research showed that it is possible for a manufacturer to physically change the center of swing gravity with an aluminum bat (Kelly and Pederson). However, wooden bats cannot be changed to achieve the advantage of an aluminum bat. This loophole allows aluminum bats to be swung with enough force to exceed the bat exit speed ratio; therefore creating serious risks to pitchers and infielders.

When hitters are using aluminum bats, pitching strategies change. Pitchers are worried about the "larger sweet spot" on the aluminum bats, and feel compelled to throw more curveballs to keep hitters off balance. The overuse of the curveball can cause undue arm strain to young pitchers. Both coaches and players know that an aluminum bat is more forgiving than a wood bat. Any decent player can hit a ball hard with an aluminum bat, but it takes real talent to hit a ball hard with a wood bat.

The game of baseball has changed since the debut of the aluminum bat. The safety risks alone are a defining reason to make the switch from aluminum to wood. Further, a player's development can greatly benefit from the use of wood. Finally, the durability of the composite bat can cost less and last longer than the aluminum bat, resulting in a better investment.

## Call for Change

Baseball bat manufacturers, through advances in modern technology, have been able to create aluminum bats that are lighter in weight than wooden bats, yet still meet the required measurement and size standards. These lighter bats allow for faster bat speeds during swings that result in a greater hit-ball velocity. Because the ball exits the aluminum bat with a higher velocity than would a ball from a wooden bat, there is naturally a greater danger of injury to defensive players. In the summer of 2003, 18 year-old Brandon Patch of Miles City, Montana was killed by a ball, hit by an aluminum bat. Many believe this death would have been prevented with the use of wood bats. Miles City, Montana Legion Baseball team is now advocating the use of wooden bats at all baseball levels. They use only wood bats and even carry extra wood bats for their opponents.

In 1998, new standards prohibited the development and use of an aluminum bat that produces a batted ball speed of over 93 miles per hour. But a recent study by the University of Massachusetts found that a loophole exists in the new aluminum bat standards. This research shows that it is possible to physically change the center of swing gravity with an aluminum bat. This is done using a technological weight-shifting technique in manufacturing the aluminum bat. This center of gravity change allows the aluminum bat to still meet bat standards but when used in the field, the batted ball speed may greatly exceed the standard ball exit speed. With wooden bats, however, it is not possible to shift the center of gravity in order to achieve this advantage…i.e. - you can swing aluminum bats faster than wood, thus increasing exit speed.

## CALL FOR CHANGE: PLAYER DEVELOPMENT

With an aluminum bat, a hitter can make contact with the ball at almost any point on the bat and achieve the same effect as a hit on the sweet spot of a wooden bat. This fact is evident by an examination of offensive production. Since the beginning of the DAC-10 (2001) batting averages, scoring, and home runs have all increased. Batting averages increased to .311 this year and the average ERA for the DAC-10 was a whopping 6.43, therefore, not only are aluminum bats lethal against defensive baseball players, they are also distorting the development of college pitchers who have to use drastically different strategies when pitching against players using aluminum bats than they would if they were pitching against players using wooden bats. The 2004 Super-Regional Championship game had 19 home runs hit in the contest.

We lack this type of statistical information at the high school level, and therefore use the documented information from the DAC-10.

## CALL FOR CHANGE: INTEGRITY OF BASEBALL

The integrity of the game has also been overshadowed by the offensive production produced by players who may or may not have the actual ability to be 'good hitters'. The average seven-inning game in the DAC-10 lasts 2 ½ hours compared to the 1½ hour in the leagues that use wood bats. Due to the abbreviated spring in North Dakota, shorter games will also please coaches, fans, players, and umpires. Pitching, defense, and the running game will be part of baseball again. Any baseball purist will find the fundamental game that wood creates irresistible. Again these statistics are taken from the DAC-10 but it is quite obvious that a game played with wooden bats will shorten games and give teams a better chance of completing more double headers. Potentially, this could lead to less school time missed for games.

## CALL FOR CHANGE: COST

Lastly, when a mandate such as this is suggested, the questions of cost also become an integral issue. It can be argued that aluminum bats last longer than wooden bats and can be used in games for several years. In fact, as stated earlier, a team can invest in 6 aluminum bats for the price of $250 each, which equals $1500 investment. The same can invest $720 on composite wood bats for the same quantity of bats. The average spring temperature in North Dakota causes deterioration in aluminum, which negatively affects the longevity of aluminum bats. It is then very justifiable to ban aluminum bats and switch to wooden ones.

## CALL FOR CHANGE: SUMMARY

There are several reasons for this suggested mandate for change. Because the exit speed of a baseball hit off an aluminum bat is much faster than the exit speed of a ball hit off of a wooden bat, the safety of players (infielder and pitchers) should be reason enough for a change. There is also a need for a switch from aluminum bats because the use of wooden

bats would contribute to the development of high school players, both the hitters and pitchers and shortens games played in North Dakota's limited spring. Furthermore, the change might decrease the actual equipment costs for some institutions, although the cost saving is a minor price to pay for the safety and development advantages that would be obtained through the use of wooden bats.